UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,622	07/16/2003	Katsunori Ueda	1472-0303P	7299

2292 7590 07/13/2004

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
TRAN, BINH Q	

ART UNIT	PAPER NUMBER
3748	

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/619,622	UEDA ET AL.	
	Examiner	Art Unit	
	BINH Q. TRAN	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-16 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-16 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 07/09/2004.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
> (e) the invention was described in-
> (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
> (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-16 are rejected under 35 U.S.C. 102 (b) as being anticipated by Sato et al. (Sato) (Patent Number 5,570,575).

Regarding claims 1, 8, 11, and 16, Sato discloses a catalyst deterioration suppressing apparatus that suppresses deterioration of an exhaust purifying catalyst (24) which purifies toxic substances in exhaust gas emitted from an engine, comprising: a catalyst temperature estimating element (e.g. 55, 60) that one of detects and estimates a temperature of the catalyst (e.g. See col. 6, lines 3-57); a fuel supply stopping element that stops supply of fuel to the engine during deceleration (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32); a fuel supply stop prohibiting element operable when said catalyst temperature estimating element determines that the temperature of the catalyst lies in a high temperature range equal to or greater than a

predetermined temperature, for prohibiting said fuel supply stopping element from stopping the supply of fuel; an air-fuel ratio control element that feedback-controls an air-fuel ratio such that the air-fuel ratio is equal to a target air-fuel ratio set based on an operative state of the engine (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32); a feedback control prohibiting element operable when said fuel supply stop prohibiting element prohibits the supply of fuel from being stopped, for prohibiting said air-fuel ratio control element from providing feedback control; and a correcting element operable when the supply of fuel is prohibited by said fuel supply stop prohibiting element, for correcting an amount of control for said intake air quantity adjusting element such that the quantity of the intake air supplied to the engine is reduced (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Regarding claims 2, and 12, Sato further discloses that the air-fuel ratio control element feedback-controls a fuel injection quantity such that the air-fuel ratio is equal to the target air-fuel ratio (e.g. See cols. 8-9, lines 1-67; col. 10, line 1-31).

Regarding claims 3, and 13, Sato further discloses that the air-fuel ratio control element comprises, a target intake air quantity setting element that sets a target intake air quantity according to an operative state of the engine, and a fuel injection quantity setting element that sets the fuel injection quantity according to the target air-fuel ratio and the target intake air quantity, wherein said air-fuel ratio control element feedback controls the fuel injection quantity set by said fuel injection quantity setting element such that the air-fuel ratio is equal to the target air-fuel ratio (e.g. See col. 5, lines 27-65).

Regarding claim 4, Sato further discloses that the air-fuel ratio control element is operable when said fuel supply stop prohibiting element prohibits the supply of fuel from being stopped,

for setting the fuel injection quantity according to the target intake air quantity and a stoichiometric air-fuel ratio (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Regarding claims 5, and 14-15, Sato further discloses that the air-fuel ratio control element is operable when said feedback control prohibiting element prohibits said air-fuel ratio from providing feedback control, for open-loop controlling the air-fuel ratio (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Regarding claim 6, Sato further discloses that the air-fuel ratio control element is operable when said feedback control prohibiting element prohibits said air-fuel ratio from providing feedback control, for controlling the air-fuel ratio to a stoichiometric air-fuel ratio or to a leaner air-fuel ratio than the stoichiometric air fuel ratio (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Regarding claim 7, Sato further discloses that the fuel ratio is detected or calculated according to air-fuel ratio information based on an output from an exhaust sensor (54)provided in an exhaust passage (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Regarding claim 9, Sato further discloses that the correcting element reduces the quantity of the intake air when the supply of fuel is stopped (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Regarding claim 10, Sato further discloses a dash pot control (60) element that provides dash pot control such that an amount of control for said intake air adjusting element during the deceleration is corrected by a greater amount than in normal operation, wherein said correcting element corrects an amount of control by said dash pot control element (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Claims 1-16 are rejected under 35 U.S.C. 102 (b) as being anticipated by Andou et al. (Andou) (Patent Number 5,570,575).

Regarding claims 1, 8, 11, and 16, Andou discloses a catalyst deterioration suppressing apparatus that suppresses deterioration of an exhaust purifying catalyst (15) which purifies toxic substances in exhaust gas emitted from an engine, comprising: a catalyst temperature estimating element (TCTM) that one of detects and estimates a temperature of the catalyst (e.g. Fig. 3 and 19; col. 6, lines 53-67col. 7, lines 1-11); a fuel supply stopping element that stops supply of fuel to the engine during deceleration; a fuel supply stop prohibiting element operable when said catalyst temperature estimating element determines that the temperature of the catalyst lies in a high temperature range equal to or greater than a predetermined temperature, for prohibiting said fuel supply stopping element from stopping the supply of fuel; an air-fuel ratio control element that feedback-controls an air-fuel ratio such that the air-fuel ratio is equal to a target air-fuel ratio set based on an operative state of the engine (e.g. See col. 6, lines 45-67; col. 7, lines 1-11, 59-67; col. 8, lines 1-45); a feedback control prohibiting element operable when said fuel supply stop prohibiting element prohibits the supply of fuel from being stopped, for prohibiting said air-fuel ratio control element from providing feedback control; and a correcting element operable when the supply of fuel is prohibited by said fuel supply stop prohibiting element, for correcting an amount of control for said intake air quantity adjusting element such that the quantity of the intake air supplied to the engine is reduced (e.g. See col. 5, lines 32-67; col. 6, lines 1-18).

Regarding claims 2, and 12, Andou further discloses that the air-fuel ratio control element feedback-controls a fuel injection quantity such that the air-fuel ratio is equal to the target air-fuel ratio (e.g. See col. 5, lines 32-67; col. 6, lines 1-18).

Regarding claims 3, and 13, Andou further discloses that the air-fuel ratio control element comprises, a target intake air quantity setting element that sets a target intake air quantity according to an operative state of the engine, and a fuel injection quantity setting element that sets the fuel injection quantity according to the target air-fuel ratio and the target intake air quantity, wherein said air-fuel ratio control element feedback controls the fuel injection quantity set by said fuel injection quantity setting element such that the air-fuel ratio is equal to the target air-fuel ratio (e.g. See col. 5, lines 32-67; col. 6, lines 1-18).

Regarding claim 4, Andou further discloses that the air-fuel ratio control element is operable when said fuel supply stop prohibiting element prohibits the supply of fuel from being stopped, for setting the fuel injection quantity according to the target intake air quantity and a stoichiometric air-fuel ratio (e.g. See col. 6, lines 45-67; col. 7, lines 1-11, 59-67; col. 8, lines 1-45);

Regarding claims 5, and 14-15, Andou further discloses that the air-fuel ratio control element is operable when said feedback control prohibiting element prohibits said air-fuel ratio from providing feedback control, for open-loop controlling the air-fuel ratio (e.g. See col. 5, lines 32-67; col. 6, lines 1-18).

Regarding claim 6, Andou further discloses that the air-fuel ratio control element is operable when said feedback control prohibiting element prohibits said air-fuel ratio from providing feedback control, for controlling the air-fuel ratio to a stoichiometric air-fuel ratio or to

a leaner air-fuel ratio than the stoichiometric air fuel ratio (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Regarding claim 7, Andou further discloses that the fuel ratio is detected or calculated according to air-fuel ratio information based on an output from an exhaust sensor (16) provided in an exhaust passage (e.g. See col. 7, lines 42-67; cols. 8-9, lines 1-67; col. 10, lines 1-32).

Regarding claim 9, Andou further discloses that the correcting element reduces the quantity of the intake air when the supply of fuel is stopped (e.g. See col. 6, lines 45-67; col. 7, lines 1-11, 59-67; col. 8, lines 1-45).

Regarding claim 10, Andou further discloses a dash pot control (5) element that provides dash pot control such that an amount of control for said intake air adjusting element during the deceleration is corrected by a greater amount than in normal operation, wherein said correcting element corrects an amount of control by said dash pot control element (e.g. See col. 6, lines 45-67; col. 7, lines 1-11, 59-67; col. 8, lines 1-45)

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of three patents:

Oono et al. (Patent Number 6128899), Tanahashi et al. (Patent Number 5795992), and Nishimura et al. (Patent Number 6560960) all discloses an exhaust gas purification for use with an internal combustion engine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (703) 305-0245. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (703) 308-2623. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

BT
July 09, 2004

Binh Tran
Patent Examiner
Art Unit 3748